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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SMITH, CAROLYN L	

ART UNIT	PAPER NUMBER
1631	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/855,458	LINCOLN ET AL.	
	Examiner	Art Unit	
	Carolyn L Smith	1631	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-125* is/are pending in the application.

4a) Of the above claim(s) *12,13,15,28,29,31,38,60,61,63 and 77-95* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,14,16-27,30,32-37,39-59,62,64-76 and 96-125* is/are rejected.

7)☒ Claim(s) *5* is/are objected to.

8)☒ Claim(s) *1-125* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *07302003* .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

DETAILED ACTION

Applicants' amendments and remarks, filed 7/18/03 and 10/29/03, are acknowledged. Amended claims 1, 4, 9, 18, 32, and 105 and new claims 110-125 are acknowledged.

Applicants' arguments, filed 7/18/03 and 10/29/03, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from the previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

The Information Disclosure Statement, filed 7/30/03, has been considered.

Claims 1-11, 14, 16-27, 30, 32-37, 39-59, 62, 64-76, and 96-125 are herein under examination.

Claim Objection

Claim 5 is objected to because of the following informality: The word "Th" is misspelled in line 1 of this claim. Appropriate correction is required.

Claims Rejected Under 35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

LACK OF WRITTEN DESCRIPTION

Claims 110-112, 122, and 124 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time of the invention was filed, had possession of the claimed invention.

The specification does not appear to support the phrase "one or" as stated in new claim 110. Written basis seems to only be provided for more than one, or plural, infinite substitution chains (i.e. original claim 41) are detected, but not a single one, as stated in new claim 110. The specification does not appear to support "model is reflective" as stated in new claim 122. Written basis is provided for one or more of the rules being reflective (i.e. original claim 6), but not for the broadly recited "model is reflective", as stated in new claim 122. The specification does not appear to support "matcher" as stated in new claim 124. Because the introduction of "one or", "model is reflective" and "matcher" lacks written basis for new claims 110, 122 and 124, as filed on 10/29/03, these phrases are considered NEW MATTER. Claims 111 and 112 are also rejected due to their dependency from claim 110.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-11, 14, 16-17, 34-37, 39-59, 62, 64-76, 110-125 are rejected under 35 U.S.C. 101 because the claims are directed to non-statutory subject matter.

Claims 1-11, 14, 16-17, 34-37, 39-59, 62, 64-76, 110-125, read in light of the specification, encompass methods performed on a computer that appear to lack any physical result performed outside of a computer.

As stated in MPEP § 2106, (IV)(2)(b), to be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan (discussed in MPEP § 2106 (IV)(2)(b)(i)), or (B) be limited to a practical application within the technological arts (discussed in MPEP § 2106 (IV)(2)(b)(ii)).

As stated in MPEP § 2106 (IV)(2)(b)(i), the independent physical acts may be post- or pre-computer processing activity as described below:

> A process is statutory if it requires physical acts to be performed outside the computer independent of and following the steps to be performed by a programmed computer, where those acts involve the manipulation of tangible physical objects and result in the object having a different physical attribute or structure. Diamond v. Diehr, 450 U.S. at 187, 209 USPQ at 8. Thus, if a process claim includes one or more post-computer process steps that result in a physical transformation outside the computer (beyond merely conveying the direct result of the computer operation), the claim is clearly statutory.

> Another statutory process is one that requires the measurements of physical objects or activities to be transformed outside of the computer into computer data (In re Gelnovatch,

> 595 F.2d 32, 41 n.7, 201 USPQ 136, 145 n.7 (CCPA 1979) (data-gathering step did not measure physical phenomenon); Arrhythmia, 958 F.2d at 1056, 22 USPQ2d at 1036), where the data comprises signals corresponding to physical objects or activities external to the computer system, and where the process causes a physical transformation of the signals which are intangible representations of the physical objects or activities. Schrader, 22 F.3d at 294, 30 USPQ2d at 1459 citing with approval Arrhythmia, 958 F.2d at 1058-59, 22 USPQ2d at 1037-38; Abele, 684 F.2d at 909, 214 USPQ at 688; In re Taner, 681 F.2d 787, 790, 214 USPQ 678, 681 (CCPA 1982).

As stated in MPEP § 2106 (IV)(2)(b)(ii), the computer-related process may be limited to a practical application in the technological arts as described below:

> There is always some form of physical transformation within a computer because a computer acts on signals and transforms them during its operation and changes the state of its components during the execution of a process. Even though such a physical transformation occurs within a computer, such activity is not determinative of whether the process is statutory because such transformation alone does not distinguish a statutory computer process from a nonstatutory computer process. What is determinative is not how the computer performs the process, but what the computer does to achieve a practical application. See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036.

Claims 1-11, 14, 16-17, 34-37, 39-59, 62, 64-76, 110-125 do not fulfill either of these statutory requirements and are therefore rejected under 35 U.S.C. 101 because the claims are directed to non-statutory subject matter.

Claims 1-11, 14, 16-17, 34-37, 39-59, 62, 64-76, 110-125 are rejected under 35 U.S.C. 101 because the claims are directed to non-statutory subject matter. As written, the claims appear to be directed to a method that merely manipulates numbers, abstract concepts or ideas, or signals representing any of the foregoing.

As stated in MPEP § 2106, (IV)(B)(1), if the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. Schrader, 22 F.3d at 294-95, 30 USPQ2d at 1458-59.

Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process.

In practical terms, claims define nonstatutory processes if they:

> – consist solely of mathematical operations without some claimed practical application (i.e., executing a "mathematical algorithm"); or
> – simply manipulate abstract ideas, e.g., a bid (Schrader, 22 F.3d at 293-94, 30 USPQ2d at 1458-59) or a bubble hierarchy (Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759), without some claimed practical application.

Claims 1-11, 14, 16-17, 34-37, 39-59, 62, 64-76, 110-125 do not fulfill any of these statutory requirements and are therefore rejected under 35 U.S.C. 101 because the claims are directed to non-statutory subject matter.

Claims Rejected Under 35 U.S.C. § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 23, 101, 110-112, and 122 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

The rejection of claims 6, 23, 101 is maintained, and newly applied to new claim 122, regarding the term "reflective" which is vague and indefinite. It is still unclear what is meant by this term and what determines the rules to be "reflective". Clarification of the metes and bounds of this term via clearer claim wording is requested.

It is noted that the sentence on the Response filed by applicants on 7/18/03, which states "Claims 6 and 23 are amended" is not true (in actuality, these claims are in their original form), as pointed out in the Response, filed 10/29/03. Applicants have referred to a passage in the specification (page 9, lines 11-15) that does not adequately address the unclarity mentioned above.

The rejection of claim 41 is maintained, and newly applied to new claim 110, regarding the phrase "infinite substitution chains are detected" which is vague and indefinite. It is still unclear how one can detect that the chains are infinite or at what point or threshold the detection is declared infinite. Clarification of this phrase via clearer claim wording is requested. Applicants referred to a passage in the specification (page 8, lines 13-21) which mentions infinite substitution chains, but fails to address the unclarity issues mentioned above. Claims 111-112 are also rejected due to their dependency from claim 110.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The rejection of claims 1-4, 5, 7-8, 10-11, 14, 34-37, 51-52, 54, 56-57, 59, and 62 is maintained under 35 U.S.C. 102(b) as being anticipated by Kohn (Molecular Biology of the Cell, 1999, Vol. 10, pages 2703-2734).

This rejection is maintained and reiterated for reasons of record.

Kohn discloses a method that can be used in the generation of functional models (page 2703, col. 2, lines 7-8 and 16-18) to organize interactions via symbols in the form of a diagram, map, and /or database (abstract, lines 1-2 and 5-6). Kohn discloses representing modifications by unique graphical constructs (page 2704, col. 1, lines 21-24) as well as actions or effects of each molecular species or interaction (page 2704, col. 1, lines 26-27). Kohn discloses the representation of all possible combinations is impractical; however, it is important to represent important combinations (page 2704, col. 1, lines 33-36). Kohn discloses symbols, rules, and the representation of interactions as lines (page 2704, col. 1, lines 37-42 and Figure 1) as stated in claims 1, 11, and 34. Kohn discloses the rule that molecular species should only appear once in the diagram and various interactions are represented as various types of lines connecting the species (page 2704, col. 1, lines 37-42). Kohn discloses the associative relationship between at least two molecular species in Figure 6 as well as the substitution of one symbol by another shown in the seventh symbol example in Figure 1 as stated in claims 1, 2, 34, and 51. The substitution of one symbol by another is interpreted to satisfy the idea set forth in the specification which states "the rewrite process detects multiple alternative states, symbols present in all alternative states can be displayed with one color" (page 17, lines 20-23). Kohn discloses alternative results due to the binding of different proteins at the same site (page 2704, col. 2, lines 19-23 and Figure 2) and a representation of effects specific to any combination of

interactions (page 2704, col. 2, lines 25-29). Kohn discloses the grouping of molecular components into subsystems according to mutual interactions or functional coherence (page 2707, col. 1, lines 21-23 and page 2715, col. 1, lines 44-45) which is reasonably interpreted as an organization of hierarchical classes as stated in claims 8 and 57. Kohn disclose 20 different possible states due to possible interactions in one example of an E2F recognition element (page 2712, col. 1, lines 8-10) as stated in claims 3 and 52. Kohn disclose a positive feedback loop that can be traced in the map (page 2712, col. 2, lines 13-14) as stated in claims 5 and 54. Kohn discloses symbols that are categorized, or typed, by their different characteristics (Figure 1) as stated in claims 7 and 56. Kohn discloses under what conditions the rule lines are to be used via their descriptions in Figure 1 as stated in claims 10 and 59. Kohn discloses the interactions with drugs (page 2715, col. 1, lines 8-16 and 21-24) as stated in claims 14 and 62. Kohn discloses the map complexity can be used to formulate specific functional hypotheses with the aid of computer simulations (page 2715, col. 1, lines 39-42) as stated in claims 1 and 34. Kohn discloses colored symbols to represent covalent modifications and gene expression in Figure 6 (page 2712, col.1, Figure 6 caption, lines 12-13) as stated in claims 35-37.
Thus, Kohn anticipates the limitations in claims 1-3, 5, 7-8, 10-11, 14, 34-37, 51-52, 54, 56-57, 59, and 62.

Applicants state the graphic, particularly the seventh symbol example in Figure 1, does not suggest substituting a symbol A with symbol B. This is found unpersuasive as Webster's II New Riverside Dictionary defines the verb "substitute" as one that takes the place of another. Therefore, symbol A (initial state) being converted to symbol B is a form of substitution in the

broadest reasonable interpretation of the term. As the Kohn reference mentions the use of alternative states and results (see discussion above), this infers that not all symbols could remain the same, something must be changed (substituted) in order to note the alternative situations.

The rejection of claim 1 is maintained under 35 U.S.C. 102(e)(2) as being anticipated by Yoshida et al (P/N 6,438,496 B1).

Yoshida et al. disclose a method and apparatus that enables the recognition of a characteristic included in a symbolic sequence that was not previously recognized (col. 1, lines 8-17). Yoshida et al. disclose genetic information specified by symbolic sequence (col. 1, lines 20-24). Yoshida et al. disclose a symbolic sequence that is converted to a parallel sequence of partial symbolic sequences (col. 1, lines 57-60). Yoshida et al. disclose alternatives of positional relation alignments (col. 2, lines 3-12). Yoshida et al. disclose the converted parallel sequence is outputted using one or more expression means such as hue, lightness, or saturation of color (col. 2, lines 17-20). Yoshida et al. disclose operations, or rules, such as the one to extract letters from the parallel sequence of the partial symbolic sequence (col. 2, lines 26-31 and col. 3, lines 52-63) which is reasonably interpreted as a form of substitution. Yoshida et al. disclose Figure 14 which represents extraction of symbolic sequence I to be processed with changing the initial point, from a symbolic sequence M (col. 5, lines 6-8). Yoshida et al. disclose using a computer processor for the above-mentioned method.

Thus, Yoshida et al. anticipate the limitations in claim 1.

Applicants state that claim 1 is amended to include the limitation that some of the rules represent interactions between biological elements and that Yoshida et al. do not disclose this limitation. This is found unpersuasive as the extraction rules in Yoshida et al. represent interactions of the nucleotide locations as seen in patterns (col. 6, lines 21-24).

The rejection of claims 1, 2, 7-8, 11, 14, 16-17, 34-37, 39-40, 44-51, 56-57, 62, and 64-76 is maintained under 35 U.S.C. 102(e)(1) as being anticipated by Allen et al. (Patent Application Publication US 2002/0068269).

Allen et al. disclose a method and system for examining a biological system (page 1, paragraph 0002). Allen et al. disclose the invention to predict interactions between biological elements (page 1, paragraph 0005). Allen et al. disclose an output module and a graphical display of the interactions in Figure 14 (and page 3, paragraph 0027), including symbols of biological elements and lines representing substitutions or associations as stated in claims 1, 2, 11, 51, and 67. The substitution of one symbol by another is interpreted to satisfy the idea set forth in the specification which states "the rewrite process detects multiple alternative states, symbols present in all alternative states can be displayed with one color" (page 17, lines 20-23). Allen et al. disclose an inference engine linked to a database of known cellular components and reactions to generate signal cascades (page 1, paragraph 0007). Allen et al. disclose using the system and method for molecular examination of the interactions and the effects of molecular interventions by genetic variation, drugs or toxic substances (page 1, paragraph 0009 and page 5, paragraph 0047) as stated in claims 14, 48, 62, and 75. Allen et al. disclose examining functional, genotypic profiles, and microarrays (page 1, paragraph 0009; page 5, paragraphs

0047 and 0048) as stated in claims 35-38, 47, 68, and 71. Allen et al. disclose using the system and method by generating results using a simulation module that includes an inference engine (page 1, paragraph 0010) as stated in claims 1, 34, and 66. Allen et al. disclose displaying aspects of the results either textually and/or graphically (page 1, paragraph 0011 and page 5, paragraph 0047). Allen et al. disclose a static graphical display or map which may be saved as a format file (page 3, paragraph 0032). Allen et al. disclose a query made to the simulation module about a protein differentially expressed and the generation of information of associated diseases as well as models involving pathology or drugs (page 4, paragraph 0036) as stated in claims 35, 39, and 69. Allen et al. disclose defining cell structures and types to establish a hierarchy of types and structures (page 4, paragraph 0038) as stated in claims 8 and 57. Allen et al. disclose the method and system may include concepts relating to cancer (page 4, paragraph 0040) as stated in claims 40, 45, 50, 70, and 73. Allen et al. disclose the use of attributes featuring a property of a concept or event that may have an associated value (page 4, paragraph 0043). Allen et al. disclose using the system and method to examine the character of cell function under pathologic versus normal conditions (page 5, paragraph 0049) which is reasonably interpreted as a comparison to a reference state as stated in claims 44 and 72. Allen et al. disclose a resultant list of drug targets can be reprocessed by the simulation module (page 5, paragraph 0050) which is reasonably interpreted as an iterative process as stated in claim 66. Allen et al. disclose incorporating multiple cell types to form tissues, using these tissues to form organs, and using these organs to form organ systems in the inference engine and simulation module (page 5, paragraph 0052) as stated in claims 7, 16, 17, 56, 64-65, and 76.

Thus, Allen et al. anticipate claims 1, 2, 7-8, 11, 14, 16, 17, 34-37, 39-40, 44-51, 56-57, 62, and 64-76.

Applicants state that the Allen et al. reference does not suggest or use rules expressing a substitution of symbols in a manner that enables an inference engine to process them. Applicants also state that Allen et al. do not teach or suggest processing an initial state using such rules or iteratively substituting symbols. This is found unpersuasive as Webster's II New Riverside Dictionary defines the verb "substitute" as one that takes the place of another. Figure 14 clearly shows such substitution occurring with the initial state of MEKK1 (top left) and various alternatives. This figure shows MEKK1 associated with various phosphorylation and phosphorylates which follow different paths of chemical equations. As the Allen et al. reference mentions the use of alternative states and results (see discussion above), this infers that not all symbols could remain the same, something must be changed (substituted) in order to note the alternative situations.

The rejection of claims 1, 2, 7-8, 11, 14, 16-17, 34-37, 39-40, 42-51, 56-57, 62, and 64-76 is maintained under 35 U.S.C. 102(e)(1) and (2) as being anticipated by Allen et al. (Patent Application Publication US 2002/0068269) and Fant et al. (P/N 5,805,461).

Allen et al. describe the limitations of claims 1, 2, 7-8, 11, 14, 16-17, 34-40, 44-51, 56-57, 62, and 64-76. Allen et al. state the system in their invention includes a display module with graphical representations (page 2, paragraph 0013). However, Allen et al. do not specifically describe a wiring diagram, it is inherent that a graphical representation can take the form of a

wiring diagram as stated in claim 42. Fant et al. describe a method and system featuring interactions (col. 12, lines 4-8) with graphical representations in the form of wiring diagrams (Figures 13-14) as stated in claims 42-43. This method and system involves symbolic process expression (col. 5, lines 31-32) with associative and transforming rules with values (col. 15, lines 2-3). As MPEP 2131.01 states, "To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Continental Can Co. USA v. Monsanto Co., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991).

Thus, Allen et al. and Fant et al. anticipate claims 1, 2, 7-8, 11, 14, 16-17, 34-37, 39-40, 44-51, 56-57, 62, and 64-76.

Applicants state that the Allen et al. reference does not describe using rules that express the substitution of symbols. This is found unpersuasive as discussed above. Applicants state they are uncertain as to how the Fant et al. reference is used in the rejection. The Fant et al. reference is used to describe characteristics which were inherently, but not specifically, disclosed in the Allen et al. reference, as discussed in MPEP 2131.01.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The rejection of claims 18-22, 24-25, 27, 30, 96-100, 102-103, and 106-108 is maintained under 35 U.S.C. 103(a) as being unpatentable over Kohn (Molecular Biology of the Cell, 1999, Vol. 10, pages 2703-2734) and Allen et al. (Patent Application Publication US 2002/0068269).

Kohn and Allen et al. describe the limitations of claims 18-20, 22, 24-25, 27, 30, 96-98, 100, 102-103, and 106-108 as seen in the above-mentioned 102(a) and 102(b) rejections. Kohn and Allen et al. lack a machine-readable medium having encoded the limitations of claims 18-20, 22, 24-25, 27, 30, 96-98, 100, 102-103, and 106-108. However, it would have been obvious to one of ordinary skill in the art at the time the invention to store any particular information from the computer to a machine-readable medium in order to integrate vast information and perform with complete knowledge all of the players involved in order to simulate pathways, as stated by Allen et al. (page 1, paragraphs 0004 and 0006). One of ordinary skill in the art would have been motivated to store sequence information on a computer readable medium just as a patent is already on a computer readable medium as part of the PTO Patenting search system that is

available to the public. Thus, Kohn and Allen et al. motivate the limitations in claims 18-20, 22, 24-25, 27, 30, 96-98, 100, 102-103, and 106-108.

Applicants state that the Kohn and Allen et al. references do not state a machine-readable medium having encoded software that is configured to cause a processor to iteratively substitute symbols. This is found unpersuasive as Allen et al. provide motivation for storing information from a computer to a machine-readable medium (see discussion above). Also, Figure 6 of the Kohn reference shows some arrowed paths that do not contain end points and these paths can be taken in different directions amongst the symbols which represents iterative substitution of symbols.

Conclusion

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR §1.6(d)). The CM1 Fax Center number is (703) 872-9306.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carolyn Smith, whose telephone number is (703) 308-6043. The examiner can normally be reached Monday through Friday from 8 A.M. to 4:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached on (703) 308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instruments Examiner Tina Plunkett whose telephone number is (703) 305-3524 or to the Technical Center receptionist whose telephone number is (703) 308-0196.

January 5, 2004

ARDIN H. MARSCHEL
PRIMARY EXAMINER